



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

*[Handwritten signature]*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/503,040	02/11/2000	Rajiv Laroia	12-4-1-1	6040
7590	03/19/2004		EXAMINER	
Ryan & Mason LLP 90 Forest Avenue Locust Valley, NY 11560			STEVENS, ROBERTA A	
			ART UNIT	PAPER NUMBER
			2665	11
DATE MAILED: 03/19/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/503,040	LAROIA ET AL.
	Examiner	Art Unit
	Roberta A Stevens	2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 02 January 2004.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-34 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4,6-14,16,17,20 and 25-34 is/are rejected.  
 7) Claim(s) 5, 15,18,19 and 21-24 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-14, 16, 17, 20 and 25-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engstrom (EP 0 7600 564 A2) in view of Dent (U.S. 5430760).
2. Regarding claims 1, Engstrom teaches (abstract) a method of uplink communication between a mobile station of a wireless communication system.
3. Engstrom does not teach transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended.
4. Dent teaches (column 3, lines 31- 67) transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base station which transmits a list including time alignment information. It would have been obvious to one ordinary skill in

the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

5. Regarding claim 2, Engstrom teaches (abstract) OFDM.

6. Regarding claim 3, Dent teaches (column 3, lines 31- 67) the intervals comprise a set of time slots that are synchronized to a downlink established between the base station and the mobile station.

7. Regarding claim 4, Dent teaches (column 8) the base station in response to a generic uplink access signal assigns an uplink channel to the mobile station and subsequently transmits power control and synchronization information to the mobile station, such that the mobile station initiates a call set-up process over the assigned uplink channel.

8. Regarding claim 6, Dent teaches (column 3) at least a subset of mobile stations adjust their uplink transmission times such that they are received synchronized at the base station.

9. Regarding claim 7, Dent teaches (columns 7-8) downlink and uplink are synchronized at the base station, and the mobile station initially synchronizes to the base station downlink, such that the mobile station is initially synchronized with a timing error of at most one round-trip propagation delay.

10. Regarding claim 8, Dent teaches (column 3) the mobile station obtains the initial synchronization prior to acquiring an uplink channel, and remains synchronized in this manner even when access is not immediately required

11. Regarding claim 9, Dent teaches (column 3) in order to gain access, the mobile station transmits, in a timing and access interval, one of a set of designated access signals which are common for and known to all mobile stations attempting access to the base station.

12. Regarding claim 10, Dent teaches (columns 3) each of a plurality of timing and access intervals, the base station searches for the presence of a transmitted access signal to determine if a mobile station is attempting to access, and after detecting an access, utilizes control logic to determine whether the access can be granted.

13. Regarding claim 11, Dent teaches (columns 3) in response to a successfully detected access signal, the base station is configured to broadcast an acknowledgement or a negative acknowledgement in a downlink channel known to each of a plurality of mobile stations, wherein the acknowledgement contains an uplink and/or downlink channel assignment for the mobile station to initiate a call set-up process.

14. Regarding claim 12, Dent teaches (columns 7-8) the base station is operative to estimate the received signal power and arrival time of an access signal of the mobile station, such that if

the access is granted, the base station can send initial power and timing correction in the access acknowledgement.

15. Regarding claim 13, Dent teaches (columns 7-8) access can be denied if the access signal was not received with sufficient power to ensure that the timing estimation has a desired level of accuracy.

16. Regarding claim 14, Dent teaches (column 1) mobile station performing identification, authentication and call set-up process initiation operations on assigned uplink and downlink channels after power levels and timing have been corrected via interaction with the base station.

17. Regarding claim 16, Dent teaches (columns 7-8) in response to a negative acknowledgement or the lack of an acknowledgement the mobile station is operative to retransmit an access signal in a later timing and access interval.

18. Regarding claim 17, Dent teaches (column 3) in order to reduce the probability of repeated collisions, each of a plurality of mobile stations are operative to select subsequent access signals from an access signal set in a manner which is independent of previous access signals selected by a particular mobile station.

19. Regarding claim 20, Dent teaches (columns 5-6) the mobile station is operative to send a unique identification as part of a call set-up process and the base station is operative to re-

transmit the unique identification back to the mobile station in a downlink so that the mobile station confirm that it is the intended user of the channel.

20. Regarding claim 25, as for the base station requesting resynchronization, it would have been obvious to one of ordinary skill in the art to adapt to Engstrom and Dent resynchronization to ensure quality of service within the system.

21. Regarding claim 27, Engstrom Engstrom teaches (abstract) a system of uplink communication, apparatus comprising a mobile station of a wireless communication system.

22. Engstrom does not teach transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended.

23. Dent teaches (column 3, lines 31-67) transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base station which transmits a list including time alignment information. It would have been obvious to one ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

Art Unit: 2665

24. Regarding claim 28, Engstrom teaches (abstract) a method of uplink communication between a mobile station and a base station of a wireless communication system.
25. Engstrom does not teach transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended.
26. Dent teaches (column 3, lines 31-67) transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base station which transmits a list including time alignment information. It would have been obvious to one ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.
27. Regarding claim 30, Engstrom teaches (abstract) an apparatus for use in a wireless communication system comprising a base station.
28. Engstrom does not teach transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended.

Art Unit: 2665

29. Dent teaches (column 3, lines 31-67) transmitting at least one of an uplink access signal and an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base station which transmits a list including time alignment information. It would have been obvious to one ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

30. Regarding claim 31, Engstrom teaches (abstract) a method of uplink communication between a mobile station and a base station.

31. Engstrom does not teach transmitting an uplink access signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended.

32. Dent teaches (column 3, lines 31-67) transmitting an uplink access signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base station which transmits a list including time alignment information. It would have been

obvious to one ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

33. Regarding claim 32, Engstrom teaches (abstract) a method of uplink communication between a mobile station and a base station of a wireless communication system.

34. Engstrom does not teach transmitting an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended.

35. Dent teaches (column 3, lines 31-67) transmitting an uplink timing synchronization signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base station which transmits a list including time alignment information. It would have been obvious to one ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

36. Regarding claim 33, Engstrom teaches (abstract) a method of uplink communication between a mobile station and a base station of a wireless communication system.

37. Engstrom does not teach receiving in the base station an uplink access signal from the mobile station in a particular one of a set of recurring intervals in which regular uplink data

transmission format least one additional mobile station to the base station is at least partially suspended.

38. Dent teaches (column 3, lines 31-67) receiving in the base station an uplink access signal from the mobile station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base station which transmits a list including time alignment information. It would have been obvious to one ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

39. Regarding claim 34, Engstrom teaches (abstract) a method of uplink communication between a mobile station and a base station of a wireless communication system.

40. Engstrom does not teach receiving in the base station an uplink timing synchronization signal from the mobile station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended.

41. Dent teaches (column 3, lines 31-67) receiving in the base station an uplink access signal from the mobile station in a particular one of a set of recurring intervals in which regular uplink data transmission format least one additional mobile station to the base station is at least partially suspended. Dent teaches a random access method that involves mobile stations to transmit access signals to the base station requesting timing access and waits for a reply from the base

station which transmits a list including time alignment information. It would have been obvious to one ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

***Allowable Subject Matter***

42. Claims 5, 15, 18, 19 and 21-24 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

43. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Roberta Stevens whose telephone number is (703) 308-6607. The examiner can normally be reached on Monday through Friday from 9:00 am to 5:30 p.m.

44. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor can be reached on (703) 308-6602.

45. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 305-3900.

46. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to: (703) 872-9306**

For informal draft communications, please label "PROPOSED" or "DRAFT"

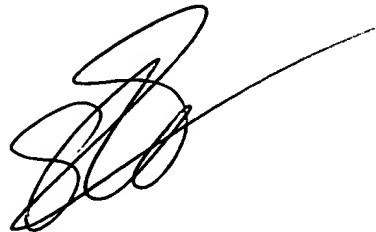
Art Unit: 2665

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA. Sixth Floor (Receptionist).

Robert A. Stevens

Patent Examiner

03-15-04



STEVEN H. D. NGUYEN  
PRIMARY EXAMINER